Abstracts

Hyperabrupt Junction Varactor Diodes for Millimeter-Wavelength Harmonic Generators (Short Papers)

K. Lundien, R.J. Mattauch, J. Archer and R. Malik. "Hyperabrupt Junction Varactor Diodes for Millimeter-Wavelength Harmonic Generators (Short Papers)." 1983 Transactions on Microwave Theory and Techniques 31.2 (Feb. 1983 [T-MTT] (Special Issue on Millimeter-Waves)): 235-238.

The design of a hyperabrupt Schottky-barrier varactor is considered with an exponentially retrograded doping profile assumed. Resistance and capacitance models are used to determine optimum doping profile characteristic length and breakdown voltage with respect to device dynamic cutoff frequency. Device fabrication is discussed and test results are presented indicating conversion efficiencies of approximately 15 percent upon doubling to the 200-GHz frequency range.

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